# Diane Tchuindjo

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# Personal Website

#### **Research Experience**

#### Massachusetts Institute of Technology – ORC

Advisor(s): Dr. Omar Khattab & Dr. Devavrat Shah

- Theory and Application of NLP Systems: Research on developing and formalizing systems that can better process natural language at scale.
- Content Moderation: Previously developed novel techniques for the purposes of robust and efficient content moderation under imperfect human reviewers with Dr. Thodoris Lykouris, (Aug. 2023 - May 2025).
- University of Maryland Mathematics Department

Research Assistant under Dr. Adam Kanigowski

# Microsoft – Quantum Architecture & Computing

Research Intern under Dr. Brad Lackey

# WORK EXPERIENCE

# Independent

Software Engineering (Part-time/Contract)

- Hypothesis Testing: Integrated property based testing into the Sympy library and implemented hypothesis test into the polynomial and number theory library. Fixed bugs and enhanced features on a novel data model that is a super-set of the standard relational and document models.
- Uncertainty Quantification: Identified regions of uncertainty and anomalies in complex and dynamic medical datasets using a proprietary data-oriented probabilistic ML platform.
- **Error Reduction**: Devised methodology to properly back-fill geographical data in Elasticsearch database to 0 reduce the rate of information retrieval error on the user side from 5% to  $\ll 0.5\%$ . Created illuminating data dashboards to properly track and analyze user movement, behavior, and retention via sql queries in metabase.

# **Envieta Systems**

Mathematician

- **Computer Vision**: Utilized Detectron2 for instance segmentation, and developed classification tools for robotic package sorting.
- **Quantum Arithmetic**: Developed novel algorithms in the field of quantum arithmetic.

# Apogee Research

Research Engineer

- **Control Theory**: Applied stochastic control theory to object tracking & estimation and robust statistical methods to outlier detection and pattern discovery in noisy data.
- Modeling: Constructed testing models, visualizations, and prototypes primarily in MATLAB, and (to a lesser extent) JAVA and Python

# Skills/Assets

- **Programming Languages**: Python, Go, Zig
- OSS Contributions: Sympy, Zed
- Personal Projects: Zigthesis

#### Preprints

Tchuindjo D. and Khattab O., "Reasoning-Intensive Regression via Frozen Language Models" (In Preparation)

# Education

Massachusetts Institute of Technology PhD Student, Operations Research

University of Maryland BS, Mathematics & Economics

Cambridge, MA Sep 2023 - Present College Park, MD Aug 2015 - Dec 2019

Cambridge, MA Sep 2025 - Present

College Park, MD

Redmond, WA

Remote

Aug 2021 - Jul 2022

Mqy 2019 - Aug 2019

Aug 2021 - Aug 2023

Arlington, VA

Jan 2020 - Dec 2020

Columbia, MD

Jan 2021 - Jul 2021